

ANNOTATIONES ZOOLOGICAE JAPONENSES

Volume 31, No. 1—March 1958

Published by the Zoological Society of Japan
Zoological Institute, Tokyo University

Three Predatory Mites of the Genus *Typhlodromus* from Japan (Phytoseiidae)*

With 9 Text-figures

Shôzô EHARA

Zoological Institute, Faculty of Science, Hokkaido University
(Communicated by T. UCHIDA)

Mites of the family Phytoseiidae, suborder Mesostigmata, are known to prey on phytophagous acarids of the families Tetranychidae, Tenuipalpidae, Eriophyidae, etc. The following three species belonging to the phytoseiid genus *Typhlodromus* Scheuten are reported in this paper:

Typhlodromus finlandicus (Oudemans)

Typhlodromus longispinosus Evans

Typhlodromus japonicus n. sp.

So far as the author is aware, no species of this family has been recorded before in Japan.

Before going further, the author wishes to offer cordial thanks to Professor Tohru Uchida who made most valuable suggestions and offered kind encouragement during this study. Acknowledgements are due to Mr. Yukio Akahira of this laboratory and to Mr. Naoshi Hikichi of the Fukushima Prefectural Horticultural Experiment Station for their kindness in placing invaluable specimens at the author's disposal. Thanks must also be extended to Prof. Sumihiko Hatsusima of Kagoshima University for his kindness in determining the species of a plant.

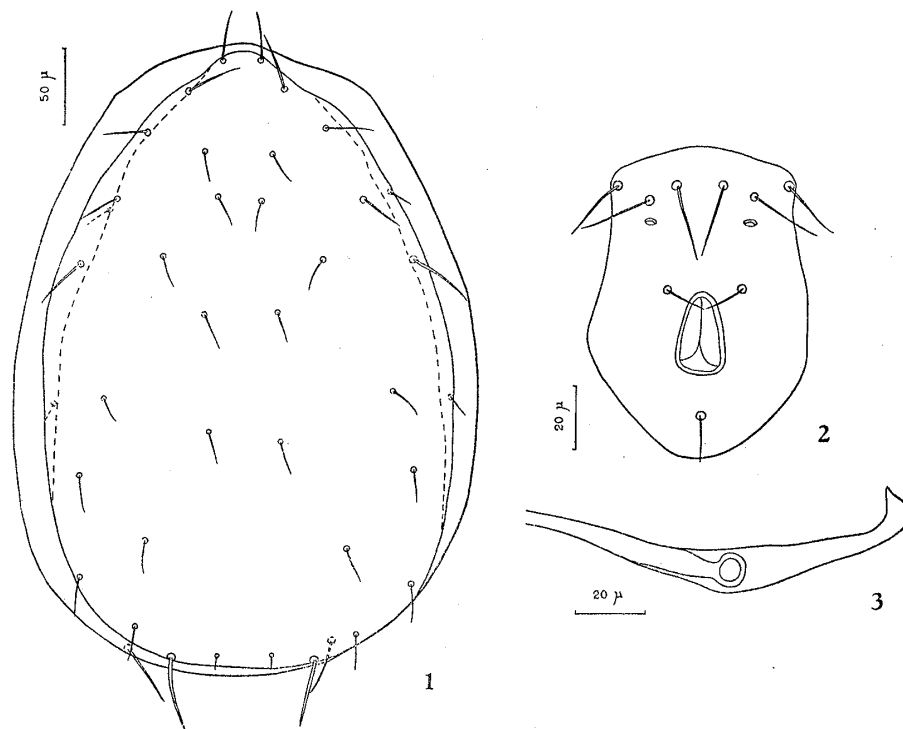
Typhlodromus finlandicus (Oudemans) (Figs. 1-3)

Seiulus finlandicus Oudemans, 1915, Ent. Ber., 4 (83): 183.

Typhlodromus finlandicus Oudemans, 1929, Ent. Ber., 8 (171): 50; Nesbitt, 1951, Zool. Verh. Leiden, No. 12, p. 25, pl. 3, pl. 9, fig. 5, pl. 10, fig. 12, pl. 11, fig. 19; Cunliffe and Baker, 1953, Pinellas Biol. Lab. Publ. No. 1, p. 19, figs.; Muma, 1955, Ann. Ent. Soc. Amer., 48:268, figs. 25-27.

* Contribution No. 406 from the Zoological Institute, Faculty of Science, Hokkaido University, Sapporo, Japan.

Female. Body from above elongate oval, 340μ long and 240μ wide in widest part, grayish white to pale yellow in colour. Fixed digit of chelicerae with two minute teeth near the distal end. Leg IV with a long, strong seta on the tarsus, and with a somewhat shorter, strong seta on both the tibia and the genu. Peritreme short, running only through the ventral part of body and nearly reaching coxa II anteriorly; the peritrematal plate extending around the posterior border of coxa IV, and ending in an acute angle. Dorsal reticulate pattern faint. Dorsal shield with seventeen pairs of setae, lateral setae nine-paired. Among the dorsal setae, L_9 the longest, L_1 and L_4 a little shorter than L_9 ; D_6 minute, shortest; L_2 and L_3 less than twice as long as D_2 , D_3 and D_4 ; M_2 about as long as L_7 and L_8 , and forming an equilateral triangle with them. Sternal shield with three pairs of setae. Genital shield subequal in width to ventrianal shield. The latter shield is much longer than wide, slightly constricted anteriorly, widest in the anal portion, with three pairs of nearly aligned preanal setae near anterior margin, a pair



Figs. 1-3. *Typhlodromus finlandicus*, female. 1. Dorsum. 2. Ventrianal shield. 3. Peritrematal plate.

of well separated pores just behind these setae, and a pair of paraanals anterior to anus.

Male. Body from above oval, 250μ long and 160μ wide in widest part. Similar to female. Movable digit of chelicerae with lobed spermatophoral process. Legs proportionately longer than on female. Ventrianal shield broadly triangular, with three pairs of preanal setae.

Specimens examined. 2♂♂ and 10♀♀, Sapporo, Hokkaido, 17. IX, 1956 (on *Quercus crispula* Blume), S. Ehara leg.

Distribution. Japan (Hokkaido), *new record*; Europe, Indonesia, North

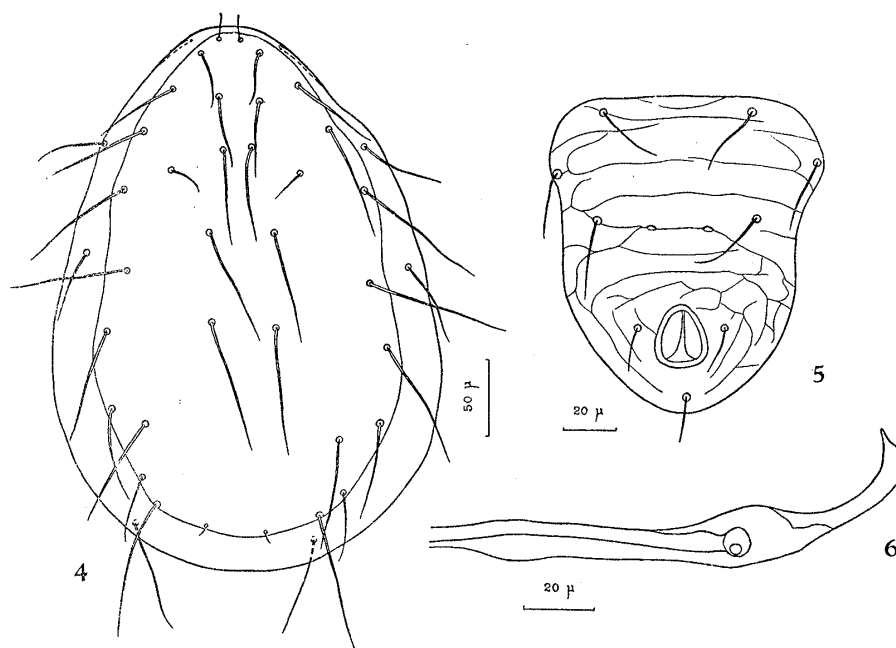
America and South America.

Remarks. *Typhlodromus finlandicus* is distinct from other species in the unique arrangement of preanal setae. It will be seen from Figure 1 that there are slight differences from some recent authors' descriptions in the dorsal chaetotactic pattern. These authors' descriptions, however, do not always agree with each other in this pattern. In short, it is probable that the dorsal chaetotaxy of this species is fairly variable intraspecifically. The specimens here studied were collected together with several specimens of *Amblyseius* of the same family on leaves of *Quercus*. A few spider mites were also found on the same leaves.

Typhlodromus longispinosus Evans (Figs. 4-6)

Typhlodromus longispinosus Evans, 1952, Ann. Mag. Nat. Hist., (12) 5 (52): 413, figs. 1, 2; Evans, 1953, Ann. Mag. Nat. Hist., (12) 6 (66): 465, fig. 10; Womersley, 1954, Austr. Jour. Zool., 2 (1): 177, fig. 3.

Female. Body from above elongate oval, 350μ long in average and 160 to 250μ wide in widest part. Fixed digit of chelicerae with three distinct teeth, movable digit with two inconspicuous teeth. Tarsus IV with a very long seta on the proximal portion. Peritreme long, reaching anteriorly the level of the seta L_1 approximately; peritrematal plate extending around the posterior margin of coxa IV, and ending in an acute angle. Dorsal shield without reticulations apparently, bearing seventeen pairs of setae, lateral setae nine-paired. The dorsal setae are longer than the distances between their neighbouring bases, except the setae D_6 and M_1 ; D_1 shorter than M_1 , though a little longer than interval between its succeeding base; M_2 forming a triangle with L_7 and L_8 . Sternal shield with three pairs of setae. Ventrianal shield wider than genital shield, and longer than wide, slightly constricted anteriorly. The ventrianal shield faintly



Figs. 4-6. *Typhlodromus longispinosus*, female. 4. Dorsum. 5. Ventrianal shield. 6. Peritrematal plate.

reticulate transversely, with three pairs of preanal setae, with a pair of pores situated just behind the third preanals, and with a pair of paraanal setae present laterad of anus.

Male. Body from above elliptical in contour, 250μ long and 125μ wide in widest part. Similar to female, especially in dorsal chaetotactic pattern. Movable digit of chelicerae bearing T-shaped spermatophoral process. Tarsus IV with a very long seta on the basal portion. Ventrianal shield broadly triangular, with three pairs of preanal setae.

Specimens examined. 2♂♂ & 14♀♀, Iizaka, Fukushima Pref., Honshu, 29. VIII, 1956 (on pear leaves), N. Hikichi leg.

Distribution. Japan (Honshu), *new record*; Australia, India, Indonesia.

Remarks. This species was described by Evans (1952), based on female specimens originating in Indonesia. In 1953, he further described the male of the species, based on Indonesian and Indian specimens. The Japanese material examined accords generally

with Evans' and Womersley's (1954) descriptions. The present specimens were found feeding on *Tetranychus* sp. on pear leaves by Mr. N. Hikichi.

Typhlodromus japonicus
n. sp. (Figs. 7-9)

Female. Body from above oval, 360μ long and 230μ wide in widest part, somewhat heavily chitinized, grayish white in colour. Fixed digit of chelicerae with six or more teeth. Leg IV with a strong seta on the genu, tibia and tarsus. Peritreme long, reaching anteriorly the level of the seta D_1 ; the posterior part of peritrematal plate large, surrounding the posterior margin of coxa IV and ending in an acute angle. Dorsal shield with longitudinal reticulations laterally, and with faint, irregularly polygonal reticulations caudally. Dorsal setae, including nine pairs of lateral setae, seventeen-

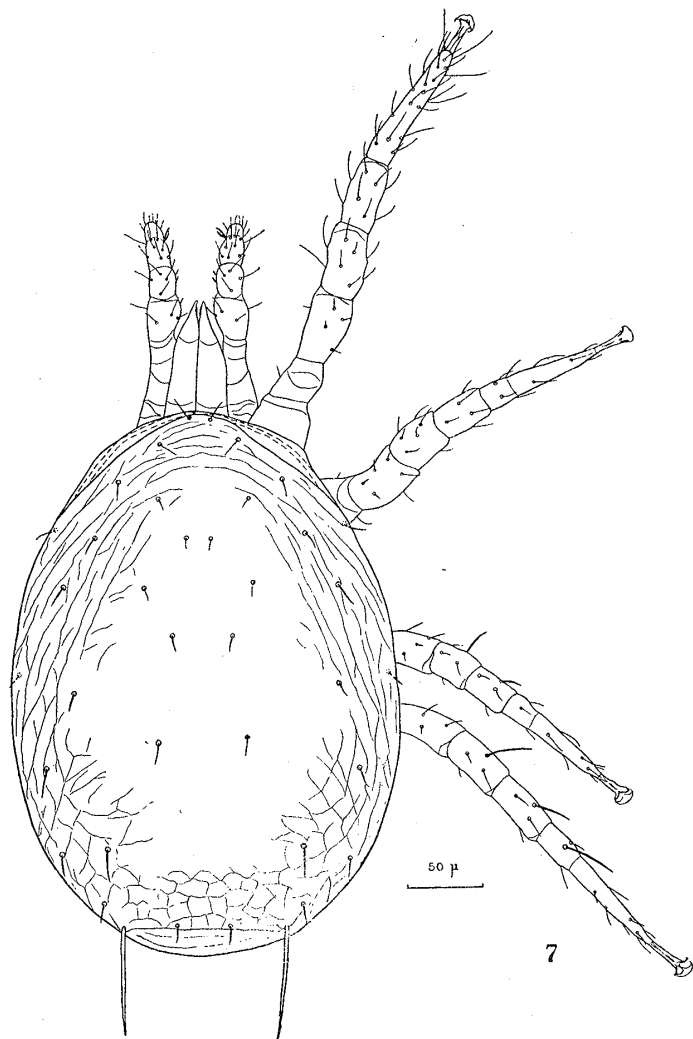


Fig. 7. *Typhlodromus japonicus* n. sp.
Dorsal view of female,

paired, much shorter than intervals between their neighbouring bases, except L_9 which is the longest seta. L_1 to L_9 , D_1 , D_5 , and M_2 generally longer than D_2 to D_4 , and M_1 ; D_6 transitional in length between these two groups; M_2 more or less paired with L_7 , about as long as ventrolateral seta, and less one-third as long as L_9 . Sternal shield with three pairs of setae. Ventrianal shield wider than genital shield, and longer than wide. The former shield provided with three pairs of preanal setae, with a pair of pores just behind the third preanal pair, and with a pair of paraanal setae set laterad of anus.

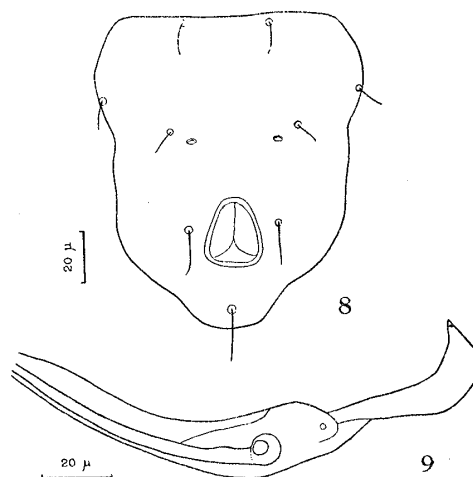
Male. Unknown.

Holotype. ♀, Koshino-o, Nishimera, Miyazaki Pref., Kyushu, 31. X, 1957 (*Mallotus japonicus* Muell.-Arg.), Y. Akahira leg.

Paratypes. 12♀♀, same data as holotype.

Distribution. Japan (Kyushu).

Remarks. In the dorsal chaetotaxy, *Typhlodromus japonicus* n. sp. resembles *Typhlodromus newsami* Evans, 1953, and *T. ovalis* Evans, 1953, both of which are known from Malaya, but differs from them in the structure of ventrianal shield. Furthermore, the new species is somewhat similar to *Typhlodromus mungeri* McGregor, 1954, from U.S.A., in the dorsal chaetotactic pattern, but is different from the latter in the reticulate pattern of dorsum, the chaetotaxy of leg IV, and the fixed digit of chelicerae.



Figs. 8, 9. *Typhlodromus japonicus* n. sp., female. 8. Ventrianal shield. 9. Peritrematal plate.

REFERENCES

- The references cited in the text are excluded.
 Evans, G. O. 1953 Ann. Mag. Nat. Hist., (12), **6**: 449-467.
 McGregor, E. A. 1954 Bull. S. Calif. Acad. Sci., **53**: 89-92.